REMARKS

This is a full and complete response to the Office action dated December 14, 2005.

All comments and remarks of record are herein incorporated by reference. Applicant respectfully traverses these rejections and all comments made in the Office action. Nevertheless, in an effort to expedite prosecution, Applicant provides the following remarks regarding the cited references.

DISPOSITION OF CLAIMS

Claims 12, 14, 17-23, 25 and 27 are pending in the application.

REJECTION UNDER 35 USC §103

Claims 12, 14, 17-23, 25 and 27 stand rejected under 35 USC §103(a) as being unpatentable over **Vonk et al.**, US patent No. 4,904,713, ("**Vonk**") in view of **Agostinis et al.**, US Patent No. 4,874,821 ("**Agostinis**").

The Examiner alleges that **Vonk** discloses a bituminous composition comprising a bituminous component, at least one elastomer, optionally hydrogenated block copolymer of an alkenyl arene and a conjuaged diene, and a polymer of a monoalkenyl arene. The Examiner concedes that **Vonk** does not disclose the weight ratio of the conjugated diene block B_1 over B_2 ranging from 3.0 to 12.0. However, to remedy this, the Examiner alleges that **Agostinis** discloses the weight ratio between two polydienic blocks to be in the range of from 0.1 to 0.5 (thus having a ratio from 3.0 to 12.0). The Examiner concludes that it would have been obvious at the time of the Applicants' invention to include weight ratio of two types of polydienic blocks of **Agostinis** in the block copolymer of the Bituminous mixture disclosed by **Vonk**.

Applicants respectfully traverse this rejection.

Bituminous compositions have been generally used for roofing applications. As time has gone on, there has been a growing demand for self-adhesive roofing membranes. The three most important characteristics required in self-adhesive compositions for

roofing applications are: (1) flow resistance, (2) low temperature tack and (3) resistance to dis-bonding. See Application, page 5, lines 1-30.

Generally, premium self-adhesive roofing compositions are generally composed of multiple components: bitumens/asphalt, a mixture of various styrenic block copolymers, (e.g. SBS, SIS, SB), tackifying resin, naphthenic oil, oxidized bitumen and filler. Which components are used is determined in part by the requirements for the final product. Certain properties are desirable in such bituminous compositions. In addition to the high temperature performance requirements of conventional membranes, self-adhesive compounds have the additional requirement of being tacky at the lowest application temperatures. See id.

Such performance requirements over a wide temperature range have resulted in the addition of a greater number of ingredients to meet these requirements, thereby resulting in more complex compositions. See id.

The claimed bituminous composition is directed to reducing the disadvantageous complexities, such that additional ingredients are no longer required. See id.

Applicants respectfully assert that the claimed bituminous composition produces unexpectedly superior results in view of the cited references and resolves the above mentioned disadvantages. See id.

Vonk fails to disclose (1) a tetrablock for the formula S_1-B_1-S_2-B_2 and (2) a weight ratio of conjugated diene block B_1 over B_2 from 3.0 to 12.

The Examiner would like to rely on **Agostinis** to teach a weight ratio of from 3.0 to 12.0 of the blocks B_1 and B_2.

However, Applicants respectfully assert that it would not be obvious to one of ordinary skill in the art that a weight ratio of B_1 over B_2 in a tetrablock formula of S_1-B_1-S_2-B_2 would be advantageous or even successful in a bituminous composition as claimed by applicant. When bitumen compositions are noted in **Agostinis**, it is speaking of block copolymers generally, that they are "widely used" in various technologies, and lists such arts such as adhesives, plastic materials, footwear. See **Agostinis**, column 1, lines 26-29. It is in this context that bituminous compositions are mentioned. Due to the large number of different requirements for each field which may use block copolymers, it is not at all

obvious that a block copolymer that is advantageous for adhesives will also be advantageous for footwear. Therefore, by mentioning bituminous compositions in such a general manner, at most one could argue that it would be "obvious to try" an experiment with the block copolymer of **Agostinis** in bituminous compositions. However, "obvious to try" is not the standard of obviousness, nor does it even rise to that level in the case at hand. See In re O'Farrell, 853 F.2d 894, 903 7 USPQ 1673 (Fed. Cir. 1988); In re Dow Chemical Co., 837 F.2d 469, 473; 5 USPQ.2d 1529 (1988). Furthermore, it is far from obvious for one of ordinary skill in the art that superior results would be obtained when applicants claimed block copolymer is used in bituminous composition. This becomes clearly evident through examining the examples included in the Application.

Furthermore, **Vonk** as well as **Agostinis** produce the expectation that there should be no difference between the use of butadiene or isoprene. As stated in **Vonk**, the "conjugated dienes are preferably ones containing from 4 to 8 carbon atoms...conjugated diene monomers include: 1,3-butadiene (butadiene), 2-methyl-1,3-butadiene (isoprene)." **Vonk** further states that mixtures of conjugated dienes may also be used" and that the "preferred conjugated dienes are butadiene and isoprene." See **Vonk**, column 2, lines 26-34. Such a disclosure indicates that there is no particular advantage whether butadiene or isoprene is used.

However, the claimed invention requires that blocks B_1 and B_2 be at least 80 mole% isoprene. Further, claim 14 require that blocks B_1 and B_2 be at least 99 mol% isoprene. In view of the indication in **Vonk** that there is no advantage whether one uses butadiene or isoprene, it is unexpected that the use of at least 80 mole% would produce superior results.

Therefore, in view of the cited references, it would not be obvious to have a weight ratio of B_1 over B_2 in the range from 3.0 to 12, or have such blocks be at least 80 mole%. This can especially be seen in light of the Examples included in the application, as they demonstrate unexpected results of the claimed invention. See MPEP §2144.08 II.B.

As indicated in the Examples of the application, page 11, line 7 to page 17, Polymer A, according to the invention, is compared with various referenced polymers. In

Table 2, in the first 3 experiments, the results of SBS polymers and SIS polymers are shown:

TABLE 2

	Experiment						
	1	2	3	4	5	6	7
Bitumen A	88	88	88	86	84	64	86
SBS1	12	—	—	—	—	—	—
SBS2	—	12	—	8	4	4	—
SIS	—	—	12	6	4	4	—
SB	—	—	—	—	8	8	—
Polymer A	—	—	—	—	—	—	14
Oil	—	—	—	—	—	10	—
Resin	—	—	—	—	—	10	—
T-peel at 5° C., N	10	6	48	11	15	33	38
T-Peel at 21° C., N	29	36	105	77	58	77	78
R&B, ° C.	120	128	75	118	110	102	121
DIN flow, pass ° C.	105	105	55	100	95	85	100
Cold bend, pass ° C.	-40	-30	-30	-35	-40	-30	-35

As can be seen in Table 2, in experiments 1-3 only, the block copolymers SBS and SIS themselves are used. As can be seen, SBS copolymers produce low T-Peel values at 5°C. Given that it is preferable to have higher T-Peel values, experiments 1 and 2 show poor T-peel values. On the other hand, SIS copolymers produce good T-peel values at 5°C, however, such polymers produce poor R&B values.

From this it can be seen that SBS produce poor T-peel at 5°C values on one hand, but adequate good R&B values on the other, however SIS produce good T-Peel values at 5°C, but poor R&B. See application, page 15, lines 14-22. SBS and SIS can be combined to provide a better balance. See Application, page 15, line 22-24. As can be seen in experiment 4, despite mixing SBS and SIS, T-peel values at 5°C are not much improved. Furthermore SB di-blocks can be added, with only slight improvement according to Table 2, and reduces the flow resistance and slightly improves the adhesion at low temperature. See Application, page 15, line 26-28.

However in order to overcome the disadvantages as can be seen from mixing the various polymers in experiments 1-5, additional ingredients must be added, including

naphthenic oil and tackifying resin. This results in a total of **FIVE** ingredients besides bitumen. The difficulty with this is that the composition becomes too complex with all the additional ingredients, making it difficult from a safety and manufacture perspective. See Application, 15, lines 29-33.

Applicants have solved this difficulty by the claimed invention. This can be seen in experiment 7. By using only **ONE** ingredient besides bitumen, results superior to experiment 6 can be obtained. This ingredient is the claimed bituminous composition. Because there are many ingredients used in experiment 6, the use of only one ingredient in experiment 7 is very advantageous.

Thus it can be seen that one of ordinary skill in the art would not expect such superior results from review of **Vonk** in view of **Agostinis**. As neither **Vonk** nor **Agostinis** suggest or imply that B_1 or B_2 should be at least 80 mole% or that that a ratio of weight ratio of B_1 over B_2 in the range from 3.0 to 12 would produce such results.

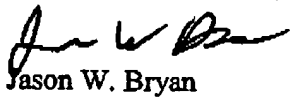
As Applicants have demonstrated unexpected results in view of the cited references, Applicants respectfully request that the 35 USC §103 rejection be withdrawn.

Please charge any shortage in fees due in connection with the filing of this paper, including Extension of Time fees, to Deposit Account No. 14.1437. Please credit any excess fees to such deposit account.

Conclusion

Having addressed all issues set out in the Office action, Applicant respectfully submits that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted,
NOVAK DRUCE & QUIGG, LLP



Jason W. Bryan
Reg. No. 51,505

1000 Louisiana Ave

53rd floor
Houston, Texas 77002
T: 713-571-3400
F: 713-456-2836